

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A mechanical resonator comprising:

a vibration body operable to performing a mechanical resonant vibration; and

an electrode located in a vicinity of the vibration body, a surface of the electrode adjacent to the vibration body having a ~~during resonant vibration and arranged curved~~ shaped in a direction of ~~to an amplitude direction of~~ the resonant vibration of the vibration body.

2. (Currently Amended) A mechanical resonator according to claim 1, wherein the curved surface of the electrode has a same surface shape as a shape of the vibration body deformed in a resonance mode.

3. (Currently Amended) A mechanical resonator according to ~~either claim 1 or claim 2~~, wherein the electrode surface adjacent~~opposed~~ to the vibration body has an area smaller than a surface area of the vibration body.

4. (Currently Amended) A mechanical resonator according to claim 3, wherein the electrode is not provided~~arranged~~ in an area adjacent~~opposed~~ to a part of the vibration body having ~~assuming~~ maximum in-amplitude during resonant vibration and a vicinity thereof.

5. (Currently Amended) A mechanical resonator according to claim 3, wherein the electrode is not provided~~arranged~~ in an area adjacent~~opposed~~ to an end of the vibration body.

6. (Currently Amended) A mechanical resonator comprising:

a vibration body operable to performing a mechanical resonant vibration; and

an electrode located in a vicinity of the vibration body and operable to vibrated in a resonance mode at a same resonant frequency as the vibration body.

7. (Currently Amended) A mechanical resonator according to ~~any one of~~ claims 1 to 6, further including a bias power source connected to the vibration body and the electrode and operable to ~~for~~ generate an electrostatic field between the vibration body and the electrode; ~~these,~~

the vibration body being operable to resonantly vibrate ~~ing~~ when a voltage change at resonant frequency is provided ~~to~~ between the vibration body and the electrode.

8. (Currently Amended) A mechanical resonator according to ~~any one of~~ claims 1 to 6, further including a detecting section operable to ~~for~~ detecting a signal from a voltage change ~~of~~ between the electrode and the vibration body; ~~and~~

wherein the detecting section is operable to detects a signal converted from a vibration into an electric signal; due to an electrostatic capacitance change ~~at~~ between the vibration body and the electrode during vibration of the vibration body.

9. (Currently Amended) A mechanical resonator according to ~~any one of~~ claims 1 to 8, wherein an insulation layer is provided in between at least a portion ~~one of opposite surfaces~~ of the electrode and the vibration body.

10. (Currently Amended) A mechanical resonator according to claim 9, wherein the insulation layer is made of a polymer particle having an insulation and a lubricity.

11. (Currently Amended) A mechanical resonator according to ~~any one of~~ claims 1 to 5, further comprising a first-second contact electrode arranged on a surface of the vibration body adjacent ~~opposed~~ to the electrode and isolated from the vibration body; ~~and~~

a second-first contact electrode arranged in a vicinity of the electrode, being isolated from the electrode and in a manner of being aligned ~~fit~~ with the first-second contact electrode in the direction of the resonant of the vibration body.

12. (Currently Amended) A mechanical resonator according to claim 11, further including a bias power source connected to the vibration body and the electrode and operable to ~~for~~ generate ~~ing~~ an electrostatic field between these vibration body and the electrode; ~~and~~

the vibration body being operable to resonantly vibrateing when a voltage change is provided ~~to~~ between the vibration body and the electrode, the vibration body being to be electrostatically absorbed by ~~means of~~ a voltage of the bias power source when the ~~first~~ second contact electrode comes near the ~~second~~ first contact electrode.

13. (Currently Amended) A mechanical resonator having a plurality of mechanical resonators according to ~~either claim 7 or claim 8~~ electrically arranged in parallel.

14. (Currently Amended) A mechanical resonator having a plurality of mechanical resonators according to ~~either claim 7 or claim 8~~ electrically arranged in series.

15. (Currently Amended) A mechanical resonator comprisingwherein a mechanical resonator according to ~~any one of claim 1 to 14~~ is being accommodated within a case sealing atmosphere at vacuum.

16. (Currently Amended) A filter comprisingusing a mechanical resonator according to ~~any one of claims 1 to 10~~.

17. (Currently Amended) A switch comprisingusing a mechanical resonator according to ~~either claim 11 or claim 12~~.

18. (Currently Amended) An electric circuit comprisingusing a mechanical resonator according to ~~any one of claims 1 to 15~~.

19. (New) A mechanical resonator according to claim 6, further including a bias power source connected to the vibration body and the electrode and operable to generate an electrostatic field between the vibration body and the electrode;

the vibration body being operable to resonantly vibrate when a voltage change at resonant frequency is provided between the vibration body and the electrode.

20. (New) A mechanical resonator according to claim 6, further including a detection section operable to detect a signal from a voltage change between the electrode and the vibration body;

wherein the detecting section is operable to detect a signal converted from a vibration body into an electric signal due to an electrostatic capacitance change between the vibration body and the electrode during vibration of the vibration body.

21. (New) A mechanical resonator according to claim 6, wherein an insulation layer is provided between at least a portion of the electrode and the vibration body.

22. (New) A mechanical resonator comprising:

a vibration body operable to perform a mechanical resonant vibration, the vibration body having a beam shape with fixed ends; and

an electrode disposed in close proximity to the vibration body, a surface of the electrode located adjacent to the vibration body having a concave shape with respect to the vibration body.

23. (New) A mechanical resonator according to claim 22, wherein an insulation layer is provided between at least a portion of the electrode and the vibration body.

24. (New) A mechanical resonator comprising:

a vibration body operable to perform a mechanical resonant vibration, the vibration body having a cantilever shape with one fixed end; and

an electrode disposed in close proximity to the vibration body, a surface of the electrode located adjacent to the vibration body having a shape resembling a shape of the vibration body during a resonance mode.

25. (New) A mechanical resonator according to claim 24, wherein an insulation layer is provided between at least a portion of the electrode and the vibration body.